UNITED STATES PATENT AND TRADEMARK OFFICE

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10/723,189	11/26/2003	Gopal B. Avinash	136854GS/YOD GEMS:0259	9027

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>6/21/2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-7,9-15 and 17-29</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-7,9-15 and 17-29</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>26 November 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Response to Amendment/Argument

1.   The argument/amendment to the claims filed on 6/21/2007 has been entered and made of record.

2.   Applicants amendments/arguments with respect to the objections to the specification have been considered. Applicant has overcome the objection to the specification based on the amendments and cancellations to the claims.

3.   Applicants amendments/arguments with respect to the objections to the claims have been considered. The amendment to the claims has overcome the objection

4.   Applicants amendments/arguments with respect to the rejections to the claims 26-27 under 35 U.S.C. 101 have been considered. Applicant has amended the claims to correct the 101 problem.

5.   Applicants amendments/arguments with respect to the rejections to the claims under 35 U.S.C. 112 are moot, the relevant claims have been cancelled.

6.   Applicants amendments/arguments with respect to the rejections to the claims 26-27 under 35 U.S.C. 101 have been considered but are not persuasive. These claims are still not statutory because they are merely data not a data structure or a computer program. See MPEP section 2106 [r-5], VI, B, "For example, a claim

reciting only a musical composition, literary work, **compilation of data**, or legal document (e.g., an insurance policy) per se does not appear to be a process, machine, manufacture, or composition of matter."

7.   Applicants amendments/arguments to claim 1-7, 9-15 and 17-29 have been considered but are not persuasive. Applicant has amended claim 1, to include the elements from claim 3. Claim 3 was rejected in the previous action and this rejection is still valid. Examiner asserts as before structure can be interpreted as areas of low contrast and not structure can be interpreted as areas of high contrast. Furthermore areas of high contrast do "probabilistically represent edges and meaningful surfaces." This is supported by applicants own specification, referring to page 9 lines 15-30, applicant defines his structure and non-structure by thresholding the gradient. One of ordinary skill in the art would readily recognize that gradient is merely a measure of contrast. Therefore it is clear that both applicant and the reference are both measuring contrast and intend to define structure and non-structure by the same characteristic (contrast). Applicant's citations of page 10 lines 7-11 are not relevant because these elements are not in the claim. The remaining independent claims contain similar language and therefore the same arguments apply.

Rejections Under 35 U.S.C. 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 26-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 28 and 29 claim an image which is merely data and therefore has no functional relationship. See MPEP section 2106 [r-5], VI, B, "For example, a claim reciting only a musical composition, literary work, **compilation of data**, or legal document (e.g., an insurance policy) per se does not appear to be a process, machine, manufacture, or composition of matter."

Rejections under 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-7, 9-15, 17-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Fan et al USPGPUB 2002/0093686.

9. Re claim 1 Fan discloses a method for processing image data comprising:

identifying a first group of pixels exhibiting a first characteristic (high local contrast

paragraph 26 line 1-3) wherein the first characteristic corresponds to structures in

the image data (areas of high contrast paragraph 26); identifying a second group of

pixels exhibiting a second characteristic (low local contrast paragraph 26 lines 4-5)

wherein the second characteristic corresponds to non-structures in the image data

(areas of low contrast paragraph 26 Note examiner is interpreting structure to be

high frequency detail areas of the image which are areas of high contrast);

identifying a third group of pixels exhibiting the first and second characteristics

(moderate local contrast paragraph 26 lines 11-12); processing the first group of

pixels in accordance with at least a first operation (low pass filtering paragraph 26

line 5); processing the second group of pixels in accordance with at least a second

operation (notch filtering paragraph 26 line 9); processing the third group of pixels in

accordance with the at least first and second operations (low pass and notch filtering

paragraph 26 lines 14-15); and blending (linear combination paragraph 26 lines 12-

14) values resulting from processing of the third group of pixels by the first process

(low pass filtering paragraph 26 lines 14-15) with values resulting from processing of

the third group of pixels by the second process (notch filtering paragraph 26 lines

14-15).

10.   Re claim 2 Fan further discloses combining the blended values with values of

pixels from the first and second groups resulting from their respective processing

(paragraph 26 note these values are clearly combined to form image "Pout").

11.   Re claim 4 Fan further discloses establishing first and second thresholds, and

wherein the first group of pixels are identified as having values falling above the first

threshold (claim 5 element f), the second group of pixels are identified as having

values falling below the second threshold (see claim 5 element e), and the third

group of pixels are identified as having values between the first and second

thresholds (claim 5 element g).

12.   Re claim 5 Fan further discloses wherein the thresholds are gradient thresholds (

paragraph 22 note the contrast values is calculated using the maximum difference

between pixels in a window which is a form of gradient meaning the thresholds will

also be gradient based).

13.   Re claims 6 Fan further discloses wherein the blending is performed based upon

relative proximity of each pixel value to the first and the second threshold (see

paragraph 24 equation 1 note the blending equation is based on the value alpha

which is threshold meaning the blending is performed based upon relative proximity

of each pixel value to the first and the second threshold.

14.   Re claim 7 Fan further discloses wherein the blending is based on a linear

function (linear combination paragraph 26).

15.   Re claim 9 Fan further discloses wherein the operations are selected from a

group consisting of enhancement, sharpening, smoothing, deconvolution,

extrapolation, interpolation, compression, digital half-toning, and contrast matching.

(see abstaract note the enhancement by sharpening (notch-filter) and

smoothing(low pass filter) is being done)

16.   Re claim 10 Fan further discloses wherein the third group of pixels are processed

in accordance with the first operation (low pass filtering) along with the first group of

pixels (low contrast pixels), and are processed in accordance with the second

operation (notch filtering) along with the second group of pixels (high contrast

pixels). See paragraph 26.

17.   Re claim 11 Fan discloses A method for processing image data comprising:

establishing first and second thresholds (claim 5 elements e and f); identifying a first

group of pixels having a values falling below the first threshold (claim 5 element e)

wherein the first characteristic corresponds to structures in the image data (areas of

high contrast paragraph 26); identifying a second group of pixels having a value

falling above the second threshold (claim 5 element f) wherein the second

characteristic corresponds to non-structures in the image data (areas of low contrast

paragraph 26 Note examiner is interpreting structure to be high frequency detail areas of the image which are areas of high contrast); identifying a third group of pixels having a value between the first and second thresholds (claim 5 element g); processing the first group of pixels in accordance with at least a first operation (low pass filtering claim 5 element e) ; processing the second group of pixels in accordance with at least a second operation(notch filtering claim 5 element f); and processing the third group of pixels in accordance with the at least first and second operations(claim 5 element g);.

18.   Re claim 12 Fan further discloses blending (linear combination paragraph 26 lines 12-14) values resulting from processing of the third group of pixels by the first process (low pass filtering paragraph 26 lines 14-15) with values resulting from processing of the third group of pixels by the second process (notch filtering paragraph 26 lines 14-15).

19.   Re claim 13 Fan further discloses wherein the thresholds are gradient thresholds (paragraph 22 note the contrast values is calculated using the maximum difference between pixels in a window which is a form of gradient meaning the thresholds will also be gradient based).

20.   Re claims 14 Fan further discloses wherein the blending is performed based upon relative proximity of each pixel value to the first and the second threshold (see

paragraph 24 equation 1 note the blending equation is based on the value alpha

which is threshold meaning the blending is performed based upon relative proximity

of each pixel value to the first and the second threshold.

21.   Re claim 15 Fan further discloses wherein the blending is based on a linear

function (linear combination paragraph 26).

22.   Re claim 17 Fan further discloses wherein the operations are selected from a

group consisting of enhancement, sharpening, smoothing, deconvolution,

extrapolation, interpolation, compression, digital half-toning, and contrast matching.

(see abstaract note the enhancement by sharpening (notch-filter) and

smoothing(low pass filter) is being done)

23.   Re claim 18 Fan further discloses combining the blended values with values of

pixels from the first and second groups resulting from their respective processing

(paragraph 26 note these values are clearly combined to form image "Pout").

24.   Re claim 19 Fan further discloses wherein the third group of pixels are processed

in accordance with the first operation (low pass filtering) along with the first group of

pixels (low contrast pixels), and are processed in accordance with the second

operation (notch filtering) along with the second group of pixels (high contrast

pixels). See paragraph 26.

13. The method of claim 11, wherein the thresholds are gradient thresholds.

25.   Re claim 20 Fan discloses a system for processing image data comprising: a

data repository for storing image data (note the image must be stored somewhere

while processing); a processing circuit (note fan discloses using a processor for his

system, see claim 11) configured to access image data from the repository (note the

processor must have access to the image data), to separate the data representative

of pixels into first (high contrast) and second groups (low contrast) and an

overlapping group (moderate contrast see paragraph 26) , to process the first and

second groups in accordance with first (low pass filter) and second operations(high

pass filter), respectively, and to process the third group in accordance with both the

first and second operations (see paragraph 26), and to combine the results of the

processing to obtained processed image data (Pout see paragraph 26) wherein the

first characteristic corresponds to structures in the image data (areas of high

contrast paragraph 26); and the second group corresponds to non structures in the

image data(areas of low contrast paragraph 26 Note examiner is interpreting

structure to be high frequency detail areas of the image which are areas of high

contrast).

26.   Re claim 21 Fan further discloses an operator workstation (processing system

        paragraph 18) for configuring the operations and for viewing images resulting from

        the processing.

27.   Re claim 22 Fan further discloses an image data acquisition (scanner paragraph

        18) system for generating the image data.

28.   Re claim 23 Fan further discloses wherein the image data acquisition system is

        selected from a group consisting of MRI systems, CT systems, PET systems,

        ultrasound systems, X-ray systems and photographic systems. (note a scanner is a

        photographic system see paragraph 18)

29.   Re claim 24, Claim 24 is interpreted to invoke 112 6th paragraph. Claim 24 is

        described as the means for performing the steps of claim .1, this has been

        interpreted to be a work station configured with the appropriate software to perform

        the method. Fan discloses performing his method this way in claim 11.

30.   Re claim 25, Claim 25 is interpreted to invoke 112 6th paragraph. Claim 25 is

        described as the means for performing the steps of claim 11, this has been

        interpreted to be a work station configured with the appropriate software to perform

        the method. Fan discloses performing his method this way in claim 11.

31.   Re claim 26, Claim 26 is a computer readable medium storing code to perform

the method of claim 1. Fan also discloses software for performing his method in

claim 11.

32.   Re claim 27, Claim 27 is a computer readable medium storing code to perform

the method of claim 1. Fan also discloses software for performing his method in

claim 11.

33.   Re claim 28 Fan discloses an image produced by the method of claim 1. (Note

Pout is the output image see paragraph 26)

34.   Re claim 29 Fan discloses an image produced by the method of claim 11. (Note

Pout is the output image see paragraph 26)

Conclusion

35.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sean Motsinger whose telephone number is 571-

270-1237. The examiner can normally be reached on 9-5 M-F.

36.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

37.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Motsinger
8/16/2007

JINGGE WU
SUPERVISORY PATENT EXAMINER